IN THE CLAIMS

Claim 1 has been amended as follows:

1. (Currently amended) A computer-aided simulation method for determining an electromagnetic field of a body to be produced ~~which has a plurality of subregions and contains a plurality of charges and currents~~, comprising the steps of:

for a body to be produced that contains a plurality of charges and currents, defining a plurality of subregions of the body;

in a computer, iteratively performing in each ~~case~~ of the plurality of subregions, a global multipole expansion, which represents an effect of charges and currents for distant points in a respective subregion of the plurality of subregions in the multipole expansion, and a local multipole expansion, which represents an effect of charges and currents at points inside the respective subregions of the plurality of subregions in a multipole expansion, until an error measure is of a predetermined size, in a last interaction, by defining a vector I representing a current distribution in the body and initially setting I = 0 and changing I in steps in successive iterations, each iteration comprising; ~~and~~

a) calculating the global multipole expansion with global multipole coefficients according to

$c^g = GI$,

c^g being a vector composed of the global multipole coefficients of the plurality of subregions,

G being a matrix determining the global multipole coefficients in a respective subregion of the plurality of subregions for the given current distribution I;

b) calculating the local multipole expansion with local multipole coefficients according to

$c^g = Tc^g$,

c^g being a vector composed of the local multipole coefficients of the plurality of subregions,

T being a translation matrix through which the global multipoles are combined into local multipoles;

c) determining the electromagnetic field from

$ZI = Z'I + Lc^{1,}$

Z denoting an impedance matrix,

Z′ denoting a part of the impedance matrix Z, representing coupling between the subregions, Z′ comprising an impedance of an element that is a component of the subregion of the body,

L denoting a matrix for evaluating the local multipole coefficients;

determining the electromagnetic field of the body by superposition using the global multipole expansion and the local multipole expansion of the plurality of subregions from the last iteration;

using the determined electromagnetic field of the body to assess electromagnetic compatibility of the body with an environment of the body; and

if said electromagnetic compatibility is satisfactory, producing the body according to all values in said last iteration.

Claims 2 and 3 have been cancelled.

2.-3. (Cancelled).

4. (Original) The method according to Claim 1, wherein the subregions are of equal size.

5. (Original) The method according to Claim 1, wherein a size of the subregions is proportional to a distance from an observer region.

6. (Original) The method according to Claim 1, wherein each subregion of the plurality of subregions is respectively assigned to a zone with uniform physical attribute.

Claim 7 has been amended as follows:

7. (Currently amended) The method according to Claim 1, wherein a respective ~~subregions~~ subregion of the plurality of subregions is split up to eight zones.

9. (Original) The method according to Claim 8, wherein the predetermined frequencies are determined by a minimum frequency and by a maximum frequency, the method being started at the minimum frequency and the electromagnetic field being determined for each frequency, continuing as far as the maximum frequency, with a predetermined step size.

10. (Original) The method according to Claim 8, wherein the predetermined frequencies are determined by a minimum frequency and by a maximum frequency, the method of being started at the maximum frequency and the electromagnetic field being determined for each frequency, continuing as far as the minimum frequency, with a predetermined step size.

11. (Original) The method according to Claim 8, in which the predetermined frequencies are determined by a minimum frequency and by a maximum frequency, the method being started at a frequency between the minimum frequency and the maximum frequency, and the electromagnetic field being determined for each frequency, continuing as far as one of the maximum frequency or the minimum frequency, with a predetermined step size.

Claim 12 has been amended as follows:

12. (Currently amended) The method according to Claim 1, wherein a stability of said body at low frequencies <u>expected in said environment</u> is ensured by carrying the global multipole expansions using elements.

Claim 13 has been cancelled.

13. (Cancelled).

Claim 14 has been amended as follows:

14. (Currently amended) A computer-aided simulation method for determining an electromagnetic field of a body which has a plurality of subregions and contains a plurality of charges and currents, comprising the steps of:

<u>for a body to be produced that contains a plurality of charges and currents, defining a plurality of subregions of the body;</u>

in a computer, iteratively performing, for predetermined frequencies, in each of the plurality of subregions, a global multipole expansion, which represents an effect of charges and currents for distance points in a respective subregion of the plurality of subregions in a multipole expansion, and a local multipole expansion, which represents an effects of charges and currents at points inside the respective subregions of the plurality of subregions in a multipole expansion, until an error measure is of a predetermined size, in a last interaction, by defining a vector I representing a current distribution in the body and initially setting I = 0 and changing I in steps in successive iterations, each iteration comprising; ~~and~~

a) calculating the global multipole expansion with global multipole coefficients according to

$c^g = GI$,

c^g being a vector composed of the global multipole coefficients of the plurality of subregions,

G being a matrix determining the global multipole coefficients in a respective subregion of the plurality of subregions for the given current distribution I;

b) calculating the local multipole expansion with local multipole coefficients according to

$c^g = Tc^g$,

c^g being a vector composed of the local multipole coefficients of the plurality of subregions,

T being a translation matrix through which the global multipoles are combined into local multipoles;

c) determining the electromagnetic field from

$ZI = Z'I + Lc^{1}$,

Z denoting an impedance matrix,

Z′ denoting a part of the impedance matrix Z, representing coupling between the subregions, Z′ comprising an impedance of an element that is a component of the subregion of the body,

L denoting a matrix for evaluating the local multipole coefficients;

determining the electromagnetic field of the body for the predetermined frequencies by superposition using the global multipole expansion and the local multipole expansion for the plurality of subregions from the last iteration;

using the determined electromagnetic field of the body to assess electromagnetic compatibility of the body with an environment of the body; and

if said electromagnetic compatibility is satisfactory, producing the body according to all values in said last iteration.

Claim 15 has been cancelled.

15. (Cancelled).

16. (Original) The method according to Claim 14, wherein the predetermined frequencies are determined by a minimum frequency and by a maximum frequency, the method being started at the minimum frequency and the electromagnetic field being determined for each frequency, continuing as far as the maximum frequency, with a predetermined step size.

17. (Original) The method according to Claim 14, wherein the predetermined frequencies are determined by a minimum frequency and by a maximum frequency, the method being started at the maximum frequency and the electromagnetic field being determined for each frequency, continuing as far as the minimum frequency, with a predeterminable step size.

18. (Original) The method according to Claim 14, in which the predetermined frequencies are determined by a minimum frequency, and a maximum frequency, the method being started at a frequency between the minimum frequency and the maximum frequency, and the electromagnetic field being determined for each frequency, continuing as far as one of the maximum frequency or the minimum frequency. with a predetermined step size.

Claim 19 has been amended as follows:

19. (Currently amended) A computer aided simulation method for determining an electromagnetic field of a body ~~which has a plurality of subregions and contains a plurality of charges and currents~~, comprising the steps of:

for a body to be produced that contains a plurality of charges and currents, defining a plurality of subregions of the body;

splitting each subregion of the plurality of subregions into a predetermined number of zones in the range of 2 to 8 zones;

in a computer, iteratively performing, in each of the plurality of subregions, a global multipole expansion using elements for low-frequency stability, the expansion representing, an effect of charges and currents for distant points in a respective subregion of the plurality of subregions in a multipole expansion, and a local multiple expansion, which represents an effect of charges and currents at points inside the respective subregions of the plurality of subregions in a multipole expansion until an error measure is of a predetermined size, in a last interaction, by defining a vector I representing a current distribution in the body and initially setting I = 0 and changing I in steps in successive iterations, each iteration comprising; ~~and~~

a) calculating the global multipole expansion with global multipole coefficients according to

$c^g = GI$,

c^g being a vector composed of the global multipole coefficients of the plurality of subregions,

G being a matrix determining the global multipole coefficients in a respective subregion of the plurality of subregions for the given current distribution I;

b) calculating the local multipole expansion with local multipole coefficients according to

$c^g = Tc^g$,

c^g being a vector composed of the local multipole coefficients of the plurality of subregions,

T being a translation matrix through which the global multipoles are combined into local multipoles;

c) determining the electromagnetic field from

$ZI = Z'I + Lc^{1},$

Z denoting an impedance matrix,

Z′ denoting a part of the impedance matrix Z, representing coupling between the subregions, Z′ comprising an impedance of an element that is a component of the subregion of the body,

L denoting a matrix for evaluating the local multipole coefficients;

determining the electromagnetic field of the body by superposition using the global multipole expansion and the local multiple expansion for the plurality of subregions from the last iteration;

using the determined electromagnetic field of the body to assess electromagnetic compatibility of the body with an environment of the body; and

if said electromagnetic compatibility is satisfactory, producing the body according to all values in said last iteration.

Claim 20 has been cancelled.

20. (Cancelled).